# FUTURE FISHERIES IMPROVEMENT PROGRAM GRANT APPLICATION

Please fill in the highlighted areas
*all sections (IA, IB, IC, etc.) must be addressed or the application will be considered invalid*

## I. APPLICANT INFORMATION

A. Applicant Name: Greater Gallatin Watershed Council

B. Mailing Address: P.O. Box 751

C. City: Bozeman State: MT Zip: 59771

Telephone: 406-560-4425 E-mail: greatergallatininfo@gmail.com

D. Contact Person: Holly Hill

Address if different from Applicant: Same as above

City: Same as above State: Same Zip: Same as above

Telephone: Same as above E-mail: Same as above

E. Landowner and/or Lessee Name (if other than Applicant): Jeff and Beth Moos

Mailing Address: 1360 Nelson Road

City: Bozeman State: MT Zip: 59718

Telephone: E-mail: jeffmoos28@gmail.com

## II. PROJECT INFORMATION*

A. Project Name: East Gallatin Streambank Stabilization Project

River, stream, or lake: East Gallatin River

Location: Township: 1S Range: 5E Section: 14
Latitude: 45.7467 Longitude: -111.0812 *within project (decimal degrees)*

County: Gallatin

B. Purpose of Project:

East Gallatin streambank stabilization

The purpose of this project is to stabilize two sections of vulnerable streambank along the East Gallatin River. The Moos Family purchased the property approximately two years ago and have identified some on-going issues with streambank stability. Currently, lawn grass exists right up to the bank of the river which is leading to severe bank undercutting and sloughing at an accelerated rate. The goal of the project is to create a more natural riparian area for resiliency, decrease erosion and sediment loading into the East Gallatin River, and install a vegetated woody matrix to increase complexity of aquatic habitat and increase shading to benefit the cold-water fishery.

C. Brief Project Description:

There are two locations on the Moos property that are experiencing a high rate of lateral erosion. The landowners would like to incorporate design elements into the project that will be beneficial for the fishery. They have taken steps towards using bioengineering techniques (such as a woody matrix and plantings) to increase the complexity of the aquatic habitat while reducing lateral migration towards their house and Nelson Road.
The attached figures show the extents of the two locations and the conceptual stabilization techniques for this project. The existing river bank will be surveyed to provide design data and construction quantities for materials. Both existing banks and near vertical with no woody vegetation to provide root mass stability in the fine grained gravelly soils. This design will serve to provide increased complexity and dissipate energy with a woody matrix of one to two layers of countersunk root wads and/or broken end logs. The woody matrix will be supported by either toe logs or rocks to maintain stability of the river bank above when undercutting occurs. Long term stability and enhanced river bank cover will also be provided with riparian sod mats and woody vegetation (willows, alders, cottonwoods, etc.) located on top of the matrix and on the re-contoured slope. The exact width and orientation of this riparian buffer and stabilization will be determined during field data collection and design. No river channel modification is proposed at this time but may be considered based on analysis, permit agency input, and resource benefits.

D. Length of stream or size of lake that will be treated: Approximately 825 feet

E. Project Budget:

**Grant Request (Dollars): $** $63,950

Contribution by Applicant (Dollars): $ In-kind $ 4,300
(salaries of government employees are not considered as matching contributions)

Contribution from other Sources (Dollars): $ 52,400 In-kind $
(attach verification - See page 2 budget template)

**Total Project Cost: $** 120,650

F. Attach itemized (line item) budget – see template

G. Attach **specific project plans, detailed sketches, plan views, photographs, maps, evidence of landowner consent, evidence of public support and fish biologist support, and/or other information necessary to evaluate the merits of the project. If project involves water leasing or water salvage complete a *supplemental questionnaire*** (fwp.mt.gov/habitat/futurefisheries/supplement2.doc).

H. **Attach land management & maintenance plans that will ensure protection of the reclaimed area**.

## III. PROJECT BENEFITS*

A. What species of fish will benefit from this project?:

Rainbow trout, brown trout, and mountain whitefish.

B. How will the project protect or enhance wild fish habitat?:

Decreased sedimentation and erosion as a result of stabilizing banks and restoring riparian vegetation will directly enhance wild fish habitat. Creation of complex woody matrix will mimic observed conditions where banks are undercut with deep habitat and cover with stable bank structure. Some larger woody debris jams may also be included to dissipate energy and provide increased habitat complexity. Other enhancements include increased shady cover and reduction in sediment loading. By replacing lawn grass with a more robust vegetated riparian community, there will be an overall increase in river bank resiliency.

C. Will the project improve fish populations and/or fishing? To what extent?:

The improved habitat features and reduction in sediment input should have a direct positive effect to the approximately 825 foot length of river. The reduction of fine sediment input should also have positive effects to adjacent reaches downstream and restore sediment continuity.

D. Will the project increase public fishing opportunity for wild fish and, if so, how?:

The project will not directly increase public fishing opportunity, however the fishery in the long term will benefit through better habitat management and cumulative effects of projects like this along the river corridor.

E. The project agreement includes a 20-year maintenance commitment. Please discuss your ability to meet this commitment.

The landowners are committed to the project and to maintaining installed treatments for the long term. Additionally, little to no maintenance is anticipated to be required if the project is installed as engineered.

F. What was the cause of habitat degradation in the area of this project and how will the project correct the cause?:

Historic land uses, reduction in riparian vegetation, natural hydrologic changes, and rip rap upstream contributed to habitat degradation. The project will stabilize eroding banks with bioengineering techniques that will result in ecological benefits to aquatic habitat.

G. What public benefits will be realized from this project?:

The Greater Gallatin Watershed Council (GGWC) collaborates with local volunteers, landowners and community partners to bring stream restoration and watershed education to the Gallatin Valley with the goal of improving water quality for all. With this in mind, GGWC selects projects with the potential for public involvement and educational opportunity. The landowner has agreed to GGWC organizing a volunteer willow planting day and project tour at the completion of the project. The goal of this community engagement is to highlight local projects, share best practices and hopefully encourage other landowners to undertake similar projects.

H. Will the project interfere with water or property rights of adjacent landowners? (explain):

No

I. Will the project result in the development of commercial recreational use on the site?: (explain):

No

J. Is this project associated with the reclamation of past mining activity?:

No

**Each approved project applicant must enter into a written agreement with Montana Fish, Wildlife & Parks specifying terms and duration of the project. The applicant must obtain all applicable permits prior to project construction. A competitive bid process must be followed when using State funds.**

## IV. AUTHORIZING STATEMENT

I (we) hereby declare that the information and all statements to this application are true, complete, and accurate to the best of my (our) knowledge and that the project or activity complies with rules of the Future Fisheries Improvement Program.

Applicant Signature: Holly Hill Date: 5/31/18

Sponsor (if applicable):

***Highlighted boxes will automatically expand.**

**Mail To:** Montana Fish, Wildlife & Parks
Fisheries Division
PO Box 200701
Helena, MT 59620-0701

**E-mail To:** Michelle McGree
mmcgree@mt.gov
(electronic submissions MUST be signed)

Incomplete or late applications will be rejected and returned to applicant.
Applications may be rejected if this form is modified.

*****Applications must be signed and *received* by the Future Fisheries Program Officer in Helena *before* December 1 and June 1 of each year to be considered for the subsequent funding period.*****

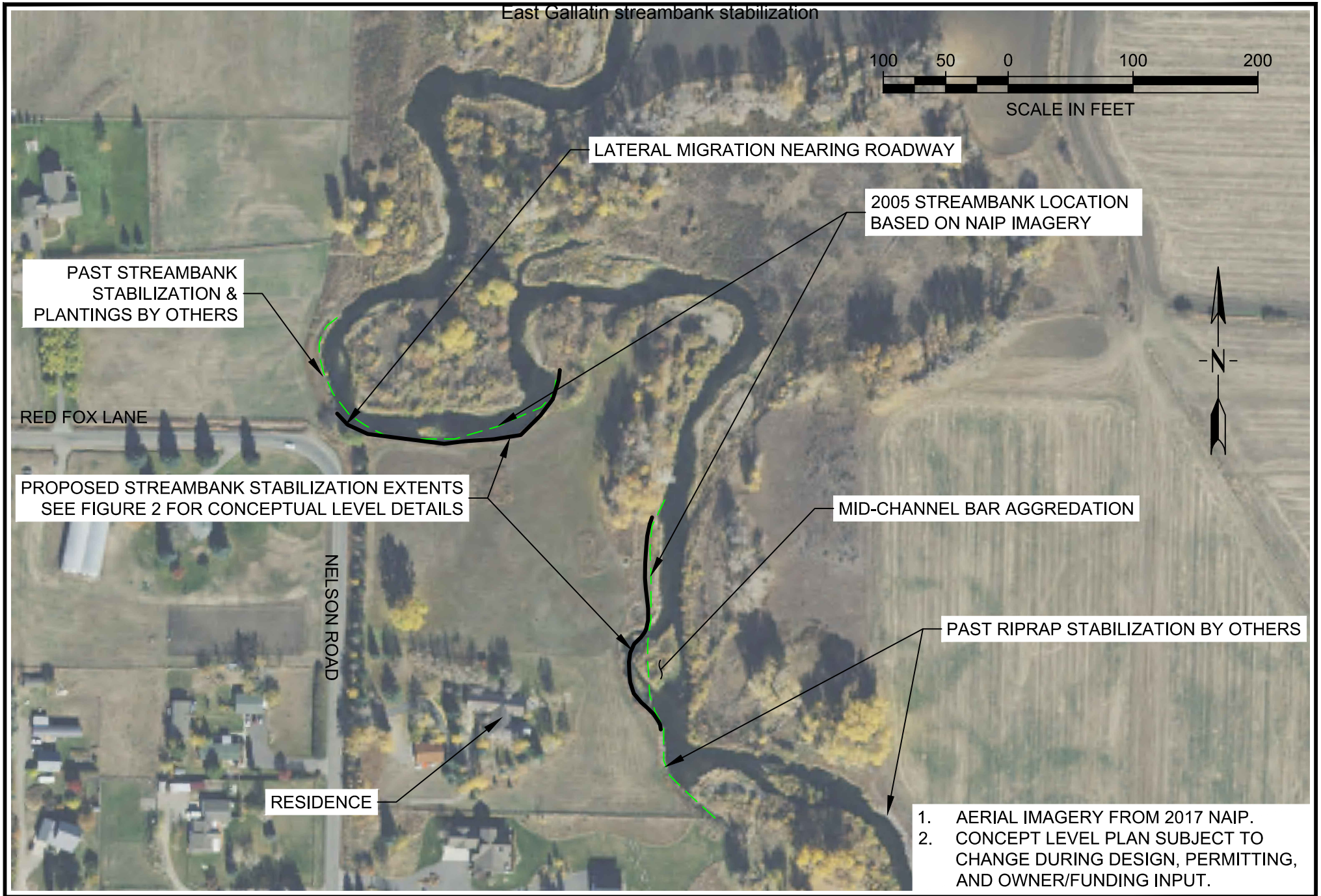
Photo 1: Image of lawn-grass up to the edge of the East Gallatin River (Moos property Spring 2018)

Revised September 6, 2017

Photo 2: Bank undercutting/sloughing at Moos Property (Spring 2018)

Photo 3: Image of riverbank vulnerability adjacent to Nelson Road where it takes an abrupt turn west (Spring 2018)

East Gallatin streambank stabilization




1. AERIAL IMAGERY FROM 2017 NAIP.
2. CONCEPT LEVEL PLAN SUBJECT TO CHANGE DURING DESIGN, PERMITTING, AND OWNER/FUNDING INPUT.

Morrison Maierle
engineers ▪ surveyors ▪ planners ▪ scientists
1 Engineering Place
Helena, MT 59602
406.442.3050
www.m-m.net


DRAWN BY: MDB
DSGN. BY: MDB
APPR. BY:
DATE: 5/2018

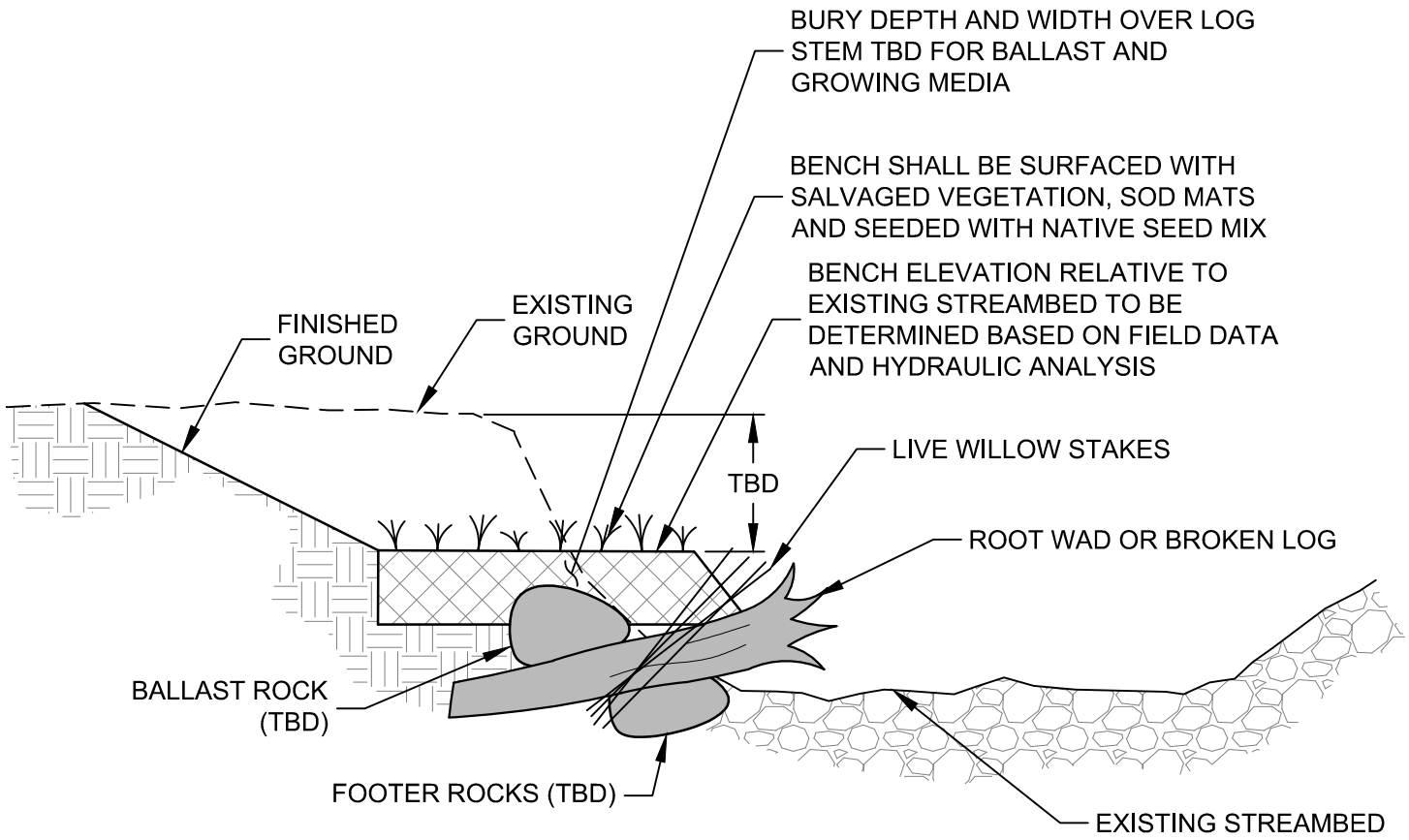
MOOS - EAST GALLATIN STREAMBANK STABILIZATION
BOZEMAN MONTANA

STREAMBANK STABILIZATION LAYOUT

PROJECT NO. 6168.001

FIGURE NUMBER 1

N:\6168\001\ACAD\Concept\MOOS_STRMBANK.dwg Plotted by matt barnes on May/29/2018




1. THIS FIGURE IS BEING PROVIDED TO DEPICT GENERAL APPROACH TO STABILIZATION AND TO SUPPORT FUNDING REQUESTS.
2. BANK STABILIZATION METHODS AND LAYOUT WILL BE DETERMINED DURING FIELD DATA COLLECTION, OWNER INPUT, AND PERMIT REQUIREMENTS. ADDITIONAL ROUGHNESS AND COMPLEXITY NOT SHOWN AT THIS TIME.
3. BANK STABILIZATION LAYOUT WILL REQUIRE CONNECTION TO STABLE EXISTING STREAMBANK AREAS TO PROVIDE SUSTAINABLE EFFECTIVENESS.
4. CONCEPT LEVEL PLAN SUBJECT TO CHANGE DURING DESIGN, PERMITTING, AND OWNER/FUNDING INPUT.

Morrison Maierle
engineers ▪ surveyors ▪ planners ▪ scientists
1 Engineering Place
Helena, MT 59602
406.442.3050
www.m-m.net


DRAWN BY: MDB
DSGN. BY: MDB
APPR. BY:
DATE: 5/2018

MOOS - EAST GALLATIN STREAMBANK STABILIZATION
BOZEMAN MONTANA

STREAMBANK STABILIZATION CONCEPT

PROJECT NO. 6168.001

FIGURE NUMBER 2

N:\6168\001\ACAD\Concept\MOOS_STRMBANK.dwg Plotted by matt barnes on May/29/2018

East Gallatin streambank stabilization

BUDGET TEMPLATE SHEET FOR FUTURE FISHERIES PROGRAM APPLICATIONS

Both tables must be completed or the application will be returned

| WORK ITEMS (ITEMIZE BY CATEGORY) | NUMBER OF UNITS | UNIT DESCRIPTION * | COST/UNIT | TOTAL COST | CONTRIBUTIONS | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | FUTURE FISHERIES REQUEST | IN-KIND SERVICES** | IN-KIND CASH | TOTAL |
| **Personnel*** ** | | | | | | | | |
| Survey | 40 | Hours | $100.00 | $ 4,000.00 | | | 4,000.00 | $ 4,000.00 |
| Design | 30 | Hours | $133.33 | $ 4,000.00 | | | 4,000.00 | $ 4,000.00 |
| Engineering | 65 | Hours | $136.92 | $ 8,900.00 | | | 8,900.00 | $ 8,900.00 |
| Permitting | 65 | Hours | $123.08 | $ 8,000.00 | | | 8,000.00 | $ 8,000.00 |
| Oversight | 65 | Hours | $115.38 | $ 7,500.00 | | | 7,500.00 | $ 7,500.00 |
| | | | | $ - | | | | $ - |
| | | | Sub-Total | $ 32,400.00 | $ - | $ - | $ 32,400.00 | $ 32,400.00 |
| **Travel** | | | | | | | | |
| Mileage | | | | $ - | | | | $ - |
| Per diem | | | | $ - | | | | $ - |
| | | | Sub-Total | $ - | $ - | $ - | $ - | $ - |
| **Construction Materials**** ** | | | | | | | | |
| Earthwork | 275 | Cubic Yards | $8.00 | $ 2,200.00 | 2,200.00 | | | $ 2,200.00 |
| Ballast Rock | 60 | Cubic Yards | $20.00 | $ 1,200.00 | 1,200.00 | | | $ 1,200.00 |
| Wood Toe Matrix | 825 | Linear Feet | $40.00 | $ 33,000.00 | 30,550.00 | | 2,450.00 | $ 33,000.00 |
| Willow Cuttings | 4,125 | Each | $2.00 | $ 8,250.00 | | | 8,250.00 | $ 8,250.00 |
| Revegetation Sod | 3,300 | Square Feet | $1.00 | $ 3,300.00 | | | 3,300.00 | $ 3,300.00 |
| Containerized Plantings | 400 | Each | $10.00 | $ 4,000.00 | | | 4,000.00 | $ 4,000.00 |
| Seeding | 400 | Pounds | $5.00 | $ 2,000.00 | | | 2,000.00 | $ 2,000.00 |
| | | | | $ - | | | | $ - |
| | | | | $ - | | | | $ - |
| | | | Sub-Total | $ 53,950.00 | $ 33,950.00 | $ - | $ 20,000.00 | $ 53,950.00 |
| **Equipment and Labor** | | | | | | | | |
| Volunteer willow planting (30 volunteers @ 8 Hours) | 240 | Hours | $15.00 | $ 3,600.00 | | 3,600.00 | | $ 3,600.00 |
| GGWC Staff Time (Coordinating willow planting and project tour) | 20 | Hours | $35.00 | $ 700.00 | | 700.00 | | $ 700.00 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Additional labor costs included in cost of construction materials. | | | | $ - | | | | $ - |
| | | | | $ - | | | | $ - |
| | | | | $ - | | | | $ - |
| | | | | $ - | | | | $ - |
| | | | Sub-Total | $ 4,300.00 | $ - | $ 4,300.00 | $ - | $ 4,300.00 |
| **Mobilization** | | | | | | | | |
| Diversion and Care of Stream | 1 | Lump Sum | $10,000.00 | $ 10,000.00 | 10,000.00 | | | $ 10,000.00 |
| Mobilization, Bonding and General Requirements | 1 | Lump Sum | $20,000.00 | $ 20,000.00 | 20,000.00 | | | $ 20,000.00 |
| | | | | $ - | | | | $ - |
| | | | | $ - | | | | $ - |
| | | | Sub-Total | $ 30,000.00 | $ 30,000.00 | $ - | $ - | $ 30,000.00 |
| | | | **TOTALS** | $ 120,650.00 | $ 63,950.00 | $ 4,300.00 | $ 52,400.00 | $ 120,650.00 |

**OTHER REQUIREMENTS:**

**All of the columns in the budget table and the matching contribution table MUST be completed appropriately or the application will be invalid. Please see the example budget sheet for additional clarification.**

*Units = feet, hours, inches, etc. Do not use lump sum unless there is no other way to describe the costs.

**Can include in-kind materials. Justification for in-kind labor (e.g. hourly rates used for calculations). Describe here or in text.

Reminder: Government salaries cannot be used as in-kind match

***The Review Panel suggests that design and oversight costs associated with a proposed project not exceed 15% of the total project budget. If design and oversight costs are in excess of 15%, applications must include a minimum of two competitive bids for the cost of undertaking the project.

****The Review Panel recommends a maximum fencing cost of $1.50 per foot. Additional costs may be the responsibility of the applicant and/or partners.

## MATCHING CONTRIBUTIONS (do not include requested funds)

| CONTRIBUTOR | IN-KIND SERVICE | IN-KIND CASH | TOTAL | Secured? (Y/N) |
|---|---|---|---|---|
| **Jeff and Beth Moos (Landowners)** | $ - | $ 32,400.00 | $ 32,400.00 | Yes |
| **MT Watershed Coordination Council Grant (Will apply for)** | $ - | $ 20,000.00 | $ 20,000.00 | No |
| **Greater Gallatin Watershed Council Volunteers and Staff** | $ 4,300.00 | $ - | $ 4,300.00 | Yes |
| | $ - | $ - | $ - | |
| | $ - | $ - | $ - | |

| | | | | |
|---|---|---|---|---|
| | $ - | $ - | $ - | |
| | $ - | $ - | $ - | |
| | $ - | $ - | $ - | |
| | $ - | $ - | $ - | |
| | $ - | $ - | $ - | |
| **TOTALS** | $ 4,300.00 | $ 52,400.00 | $ 56,700.00 | |

FWP.MT.GOV

THE OUTSIDE IS IN US ALL.

Region 3 Headquarters Bozeman, MT 59718 (406) 994-4042

May 25, 2018

Christine A. Pearcy
2880 Technology Blvd W
Bozeman, MT 59718

Re: Moos Property – E. Gallatin River – Bank Stabilization

Dear Ms. Pearcy,

Please consider this letter as full support for development of a biologically sound bank stabilization project on the East Gallatin River (Moos property). From the perspective of FWP; rip-rap is not a biologically defensible form of stream-bank protection, other alternatives, particularly bioengineering have proven to be successful at reducing deformability while still providing the ecological benefits of a functioning riparian zone.

As part of a team that reports to the Gallatin Conservation District for 310 permitting, we often see the negative consequences of removal of riparian buffers. Eroding banks identified on the Moos property appear to have no vegetative component other than lawn grass. Steeply cut banks, erosive soils, and the high energy of the East Gallatin in spring will likely continue to produce excessive fines and exacerbate lateral movement of the East Gallatin. Permitting of rip-rap would likely transfer energy downstream to other landowners, compounding problems.

Given the current condition of banks on the Moos property, a bioengineered solution is the best current option. I look forward to working with you in the future during development of the proposed project. If you have any additional questions, feel free to contact me at (406) 994-6938.

Sincerely,

David Moser
Madison-Gallatin Fisheries Biologist

Holly Hill, Watershed Coordinator
Greater Gallatin Watershed Council
PO Box 751
Bozeman, MT 59771

Dear Holly,

My name is Jeff Moos. My wife Beth and I recently purchased the property at 1360 Nelson Rd. In Bozeman.

We purchased the property for its esthetic beauty and it's location on the East Gallatin river. We both enjoy the property, however, we are alarmed at the streambank changes we have seen in the short time we have owned the property. The long term preservation and stabilization of the streambank, as well as, the quality river resource are critical concerns for us as landowners and stewards of the property and river corridor.

It is with this in mind that we look to do a well researched and carefully engineered project that accomplishes the land preservation and property protection goals while preserving and perhaps enhancing the long term stream quality and fishery.

I know you have had a chance to connect with our experts Christine Pearcy and Matt Barnes who understand our goals as property owners while being mindful of the environmental impacts. Thank you for your interest in our project. Your consideration and support of the project as well as any funding resources available would stand as a strong example of a collaborative approach and win-win outcome for both property owner and the water resource.

We enthusiastically request your continued support of the project.

With regards,

Jeff and Beth Moos